PS-8750

USA Model
E Model

STEREO TURNTABLE SYSTEM

SPECIFICATIONS

TURNTABLE (Semi-auto player)

Platter: 32 cm (12 5/8 inches), diecast aluminum

Drive System: Direct drive, crystal lock control system

Speed: 33 1/3 rpm, 45 rpm

Pitch Control Range: ±4 % (Crystal Lock Switch: OFF)

Wow and Flutter: Less than ±0.04 % (DIN, weighted)
Less than 0.025 % (NAB, weighted rms)

S/N Ratio: Greater than 70 dB (DIN, B-curve weighted)

	Position of the Xtal Lock Switch	
	ON	OFF
Initial Drift:	within 0.0005 %	within 0.1 %
Load Characteristics: (at 3 g tracking force)	0%	less than 0.5 %
Speed Deviation:	within 0.003 %	variable

TONEARM

Type: Statically balanced, universal

Arm Length: 320 mm (12 5/8 inches), overall
237 mm (9 3/8 inches), pivot-to-stylus

Overhang: 15 mm (19/32 inches)

Tracking Error: + 2°, -2°

Tracking-force Adjustment Range: 0–2.5 g (caribrated every 0.25 g)

Tonearm Height Adjustment Range: 7 mm (9/32 inches)

Shell Weight: 12.5 g (SH-160)

Cartridge Weight Range: 3–10 g
(8–14 g with extra weight)
(13.5–19.5 g with extra weight)

GENERAL

Power Requirements: 120 V ac, 60 Hz (USA Model)
110, 127, 220 or 240 V ac, 50/60 Hz (E Model)

Power Consumption: 20 W

Dimensions: 458 (w) x 184 (h) x 395 (d) mm
18 1/16 (w) x 7 1/4 (h) x 15 9/16 (d) inches
including projecting parts and controls.

Weight: Approx. 14.2 kg, 31 lb 5 oz (net)
Approx. 19 kg, 41 lb 14 oz (with shipping carton)

SONY®

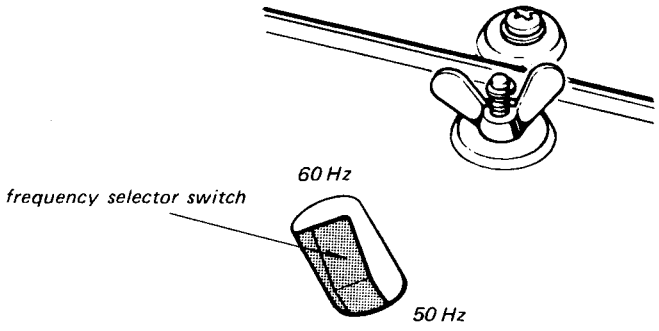
SERVICE MANUAL

120

NOTE: SELECTION OF POWER FREQUENCY

Procedure:

1. Remove the turntable.
2. Make sure the power frequency of the area this set is used in, and then select the position of Frequency Selector Switch shown in figure below.



SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM

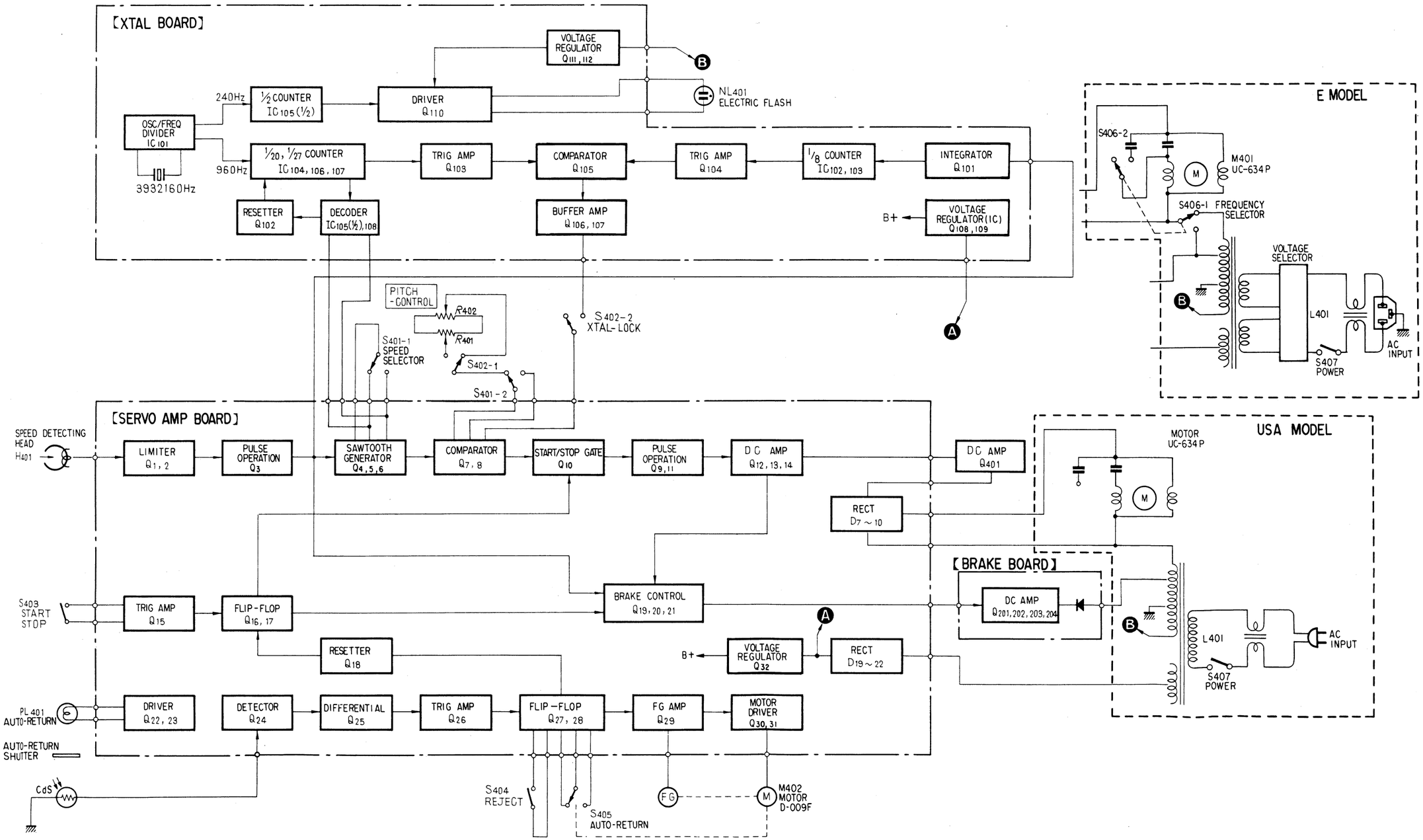


Fig. 1-1. Block diagram

1-2. EXTERNAL VIEW

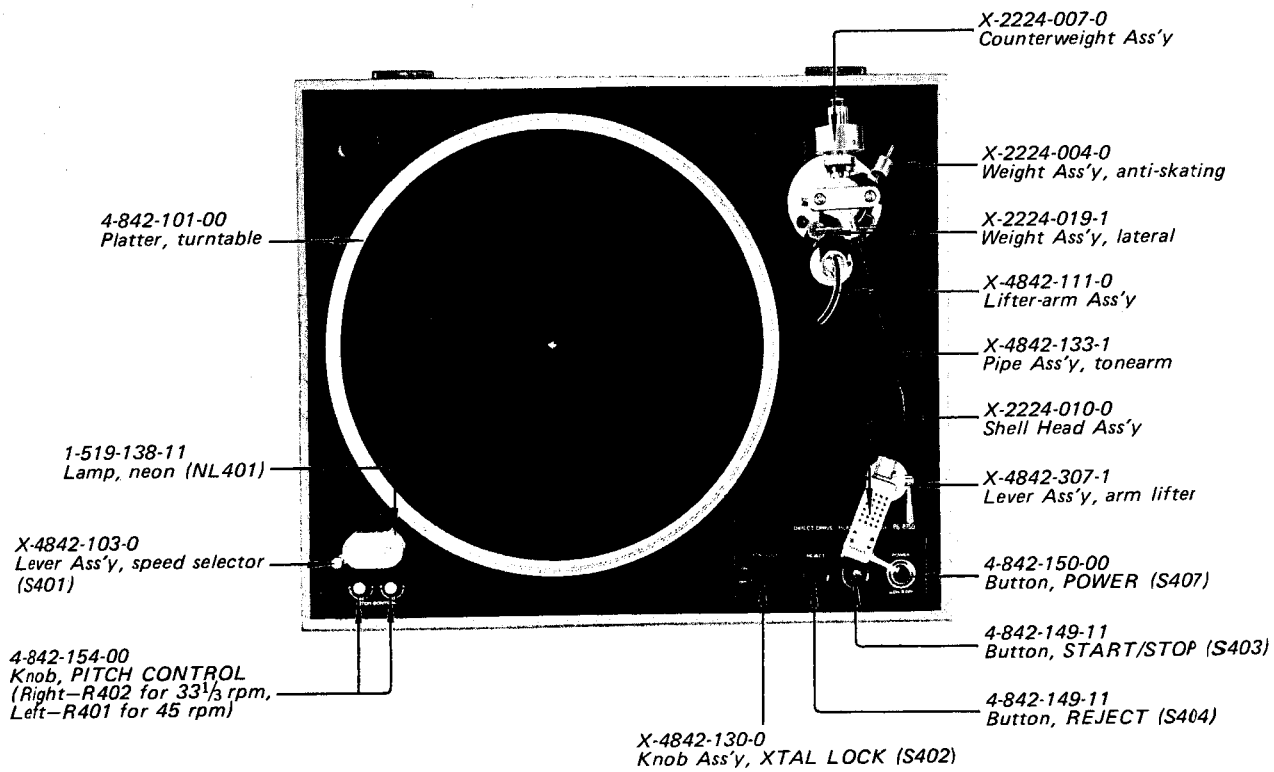


Fig. 1-2. External view

1-3. INTERNAL VIEW

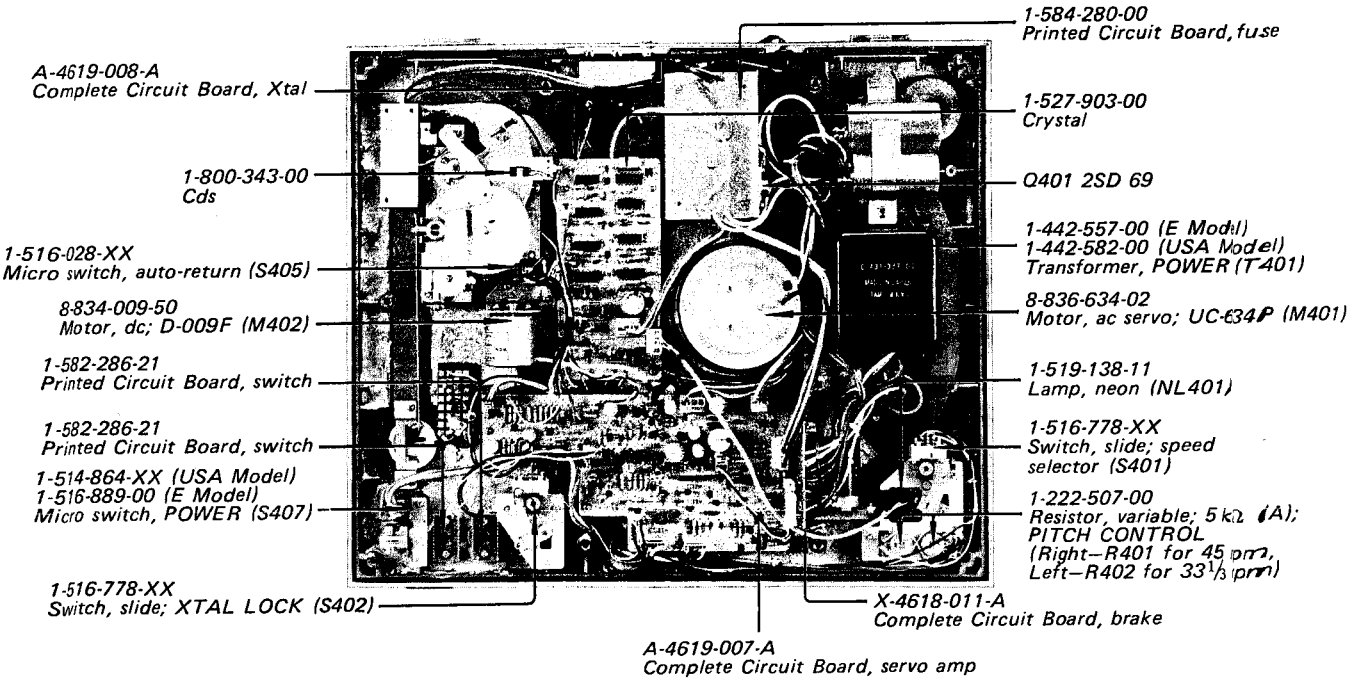


Fig. 1-3. Internal view

SECTION 2
DISASSEMBLY AND REPLACEMENT

2-1. TOP COVER REMOVAL

1. Open the top cover (❶).
2. Lift the top cover toward ❷ .

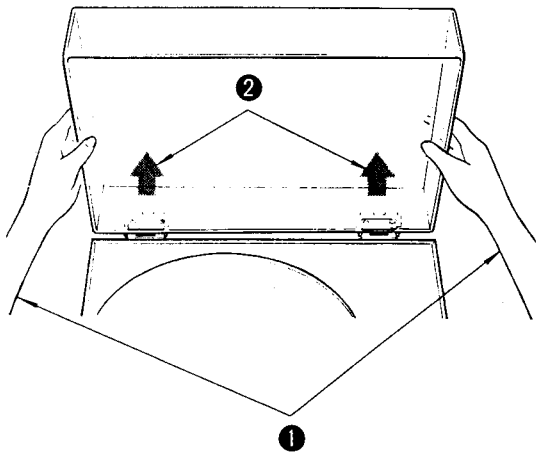


Fig. 2-1. Top cover removal

2-2. BOTTOM BOARD REMOVAL

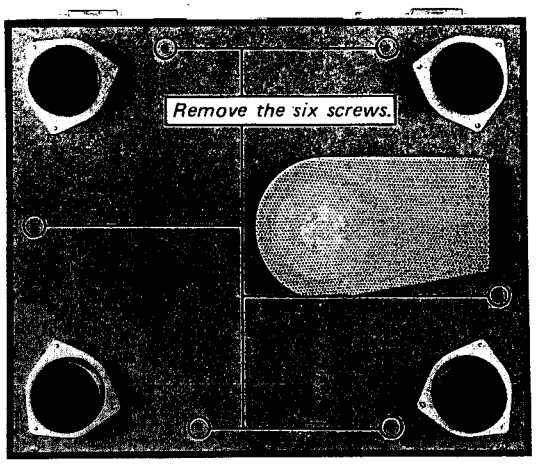


Fig. 2-2. Bottom board removal

2-3. CARTRIDGE REPLACEMENT

1. Pull out the four lead wires (❶).
2. Loosen the two screws and then replace the cartridge (❷).
3. Connect the four lead wires to the cartridge as shown in Fig. 2-3. (c).

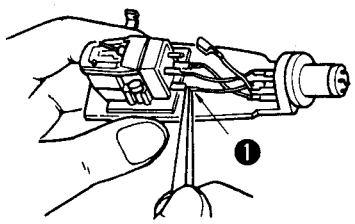


Fig. 2-3. (a) Pulling lead wires

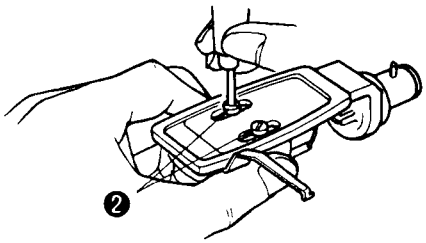


Fig. 2-3. (b) Loosening screws

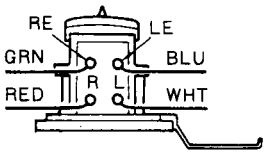
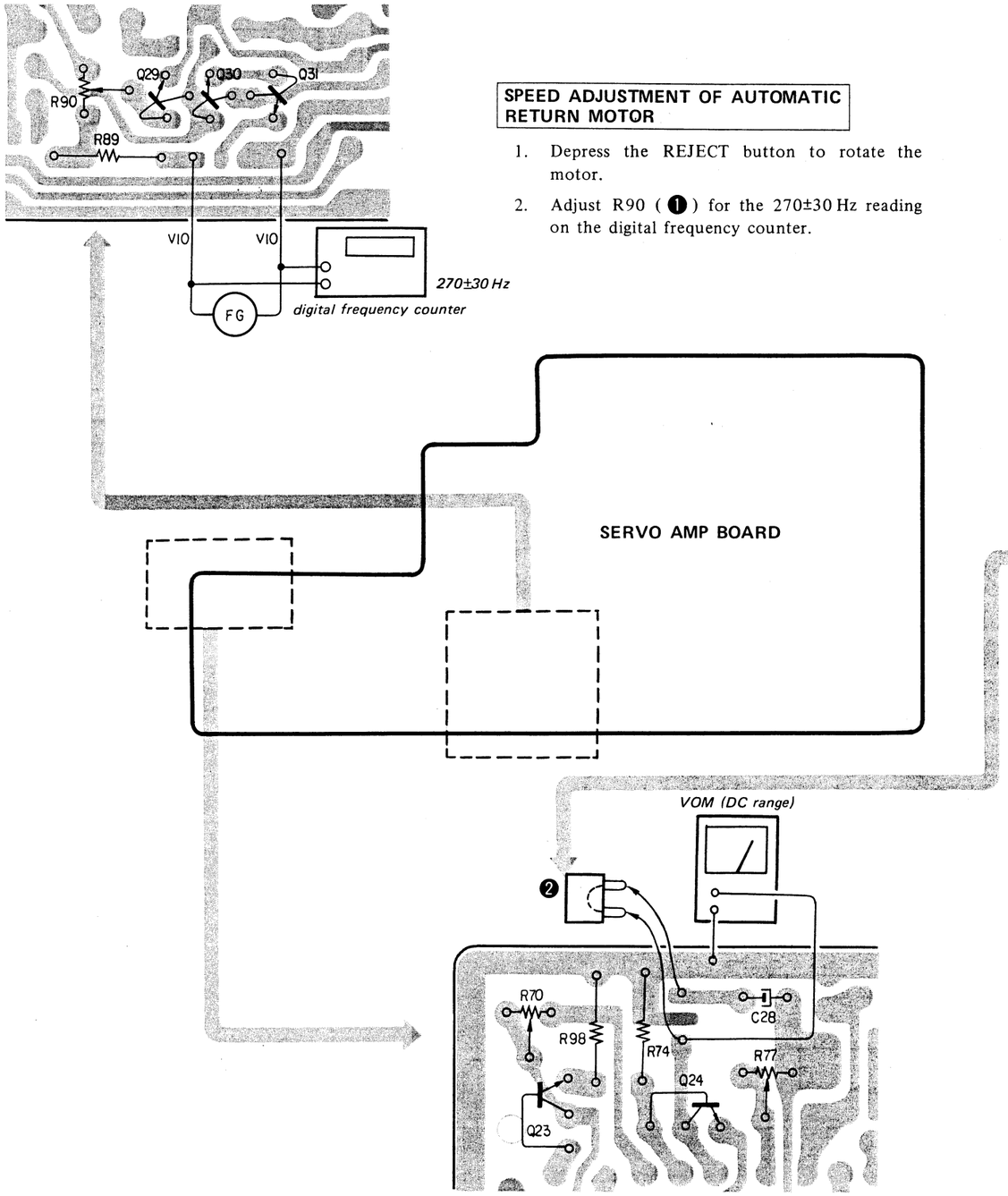


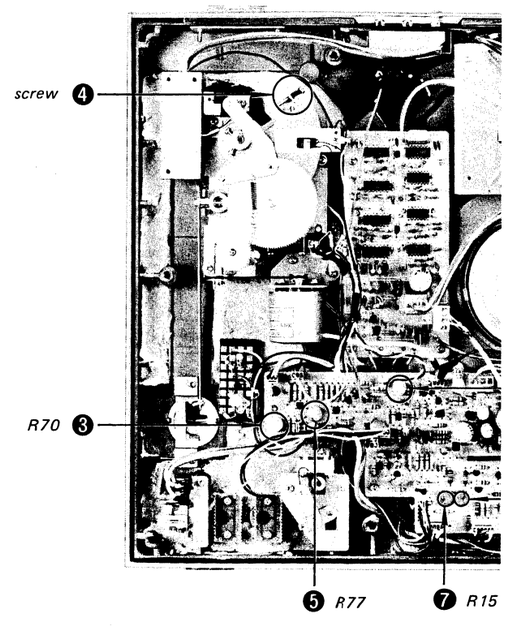
Fig. 2-3. (c) Lead wire connection

SECTION 3
ELECTRICAL ADJUSTMENTS



SPEED ADJUSTMENT OF AUTOMATIC RETURN MOTOR

1. Depress the REJECT button to rotate the motor.
2. Adjust R90 (❶) for the 270±30 Hz reading on the digital frequency counter.



AUTOMATIC RETURN ADJUSTMENT

A. Lamp Brightness Adjustment

1. Remove the connector (❷).
2. Set the tonearm fully close to the center of turntable. Adjust R70 (❸) for the 2 V reading on the VOM.
3. Set the tonearm fully apart from the turntable. Adjust R70 (❸) for 12±0.5 V dc reading on the VOM.

B. Operational Check at Automatic Return by Using a Record.

1. Check the automatic return operation.
2. If it does not work properly, perform the following two procedures.

- **Procedure (a)**

Adjust the screw (❹) referring to the table below.

Time of automatic return	Turning direction of the screw
Too early	Clockwise
Too late	Counterclockwise

- **Procedure (b)**

Turn carefully R77 (❺) counterclockwise to make the sensitivity of automatic return detector circuit higher.

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AUTOMATIC RETURN ADJUSTMENT

A. Lamp Brightness Adjustment

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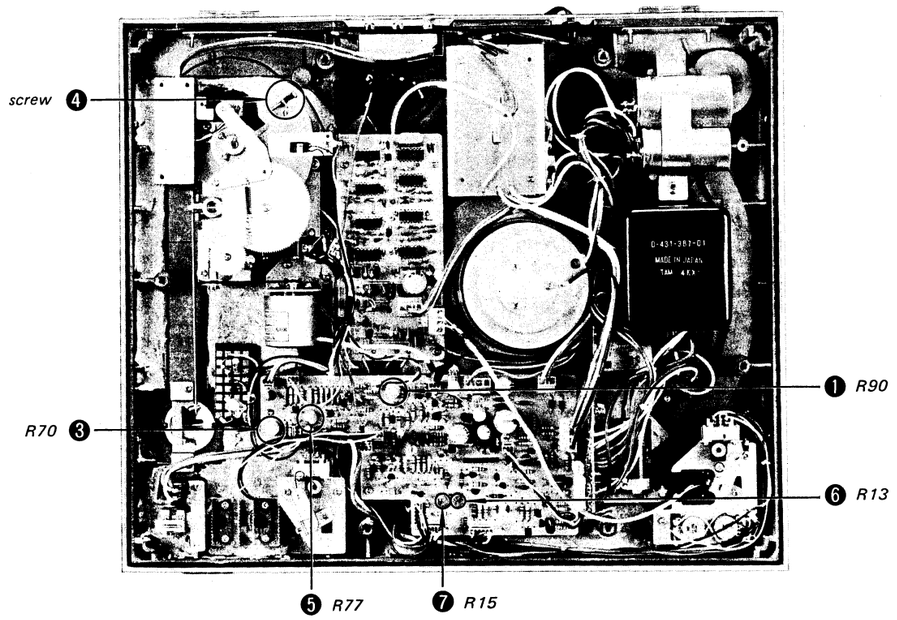


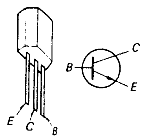
TURNTABLE SPEED ADJUSTMENT

1. Set the XTAL LOCK switch to OFF.
2. Set the PITCH CONTROL knob to mechanical mid.
3. To obtain the speed deviation 0% of 45 rpm and 33⅓ rpm, adjust R13 (❻) for 45 rpm and R15 (❼) for 33⅓ rpm.
4. Make sure that the turntable speed is within the specified Pitch Control Range (±4% for each speed) when setting the PITCH CONTROL knob to maximum or minimum.
5. Make sure that the turntable speed is 45 rpm when setting the XTAL LOCK switch to ON and it never deviate by turning the PITCH CONTROL knob. Perform the same procedure for 33⅓ rpm.
6. Make sure that the turntable speed is certainly 45 rpm after changing the START/STOP switch several times. Perform the same procedure for 33⅓ rpm.

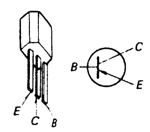
SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM

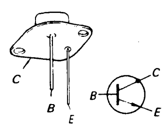
Q1~4, 10, 12~21, Q23~30, 101~107, 109 } 2SC633A
Q111, 201: 2SC926A



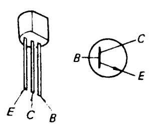
Q14: 2SA677



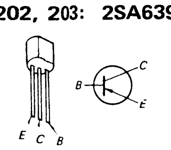
Q204: 2SC867
Q112: 2SC1431



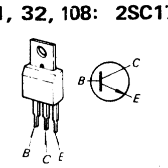
Q22: 2SC1474



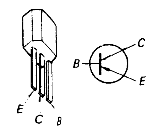
Q202, 203: 2SA639S



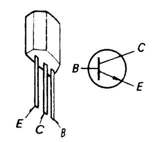
Q31, 32, 108: 2SC1760



Q5, 6, 9, 11: 2SA677

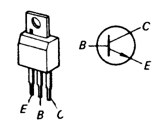


Q7, 8: 2SC633A

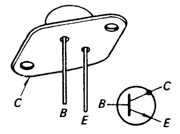


(replacement transistor for 2SC1963)

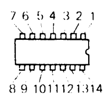
Q110: 2SC1127



Q401: 2SD69

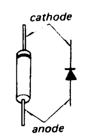


IC101: MSM5576
IC102~106: M-53200P
IC107: M-53210P
IC108: M-53220P

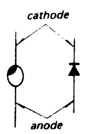


(Top view)

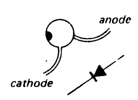
D11~17, 23, 24, D101~105, 107 } 1S1555
D7~10, 19~22, D106, 108, 201, 202 } 10E-2
D203: 10E-4
D25: 1T40



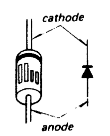
D3, 4: MV-5L

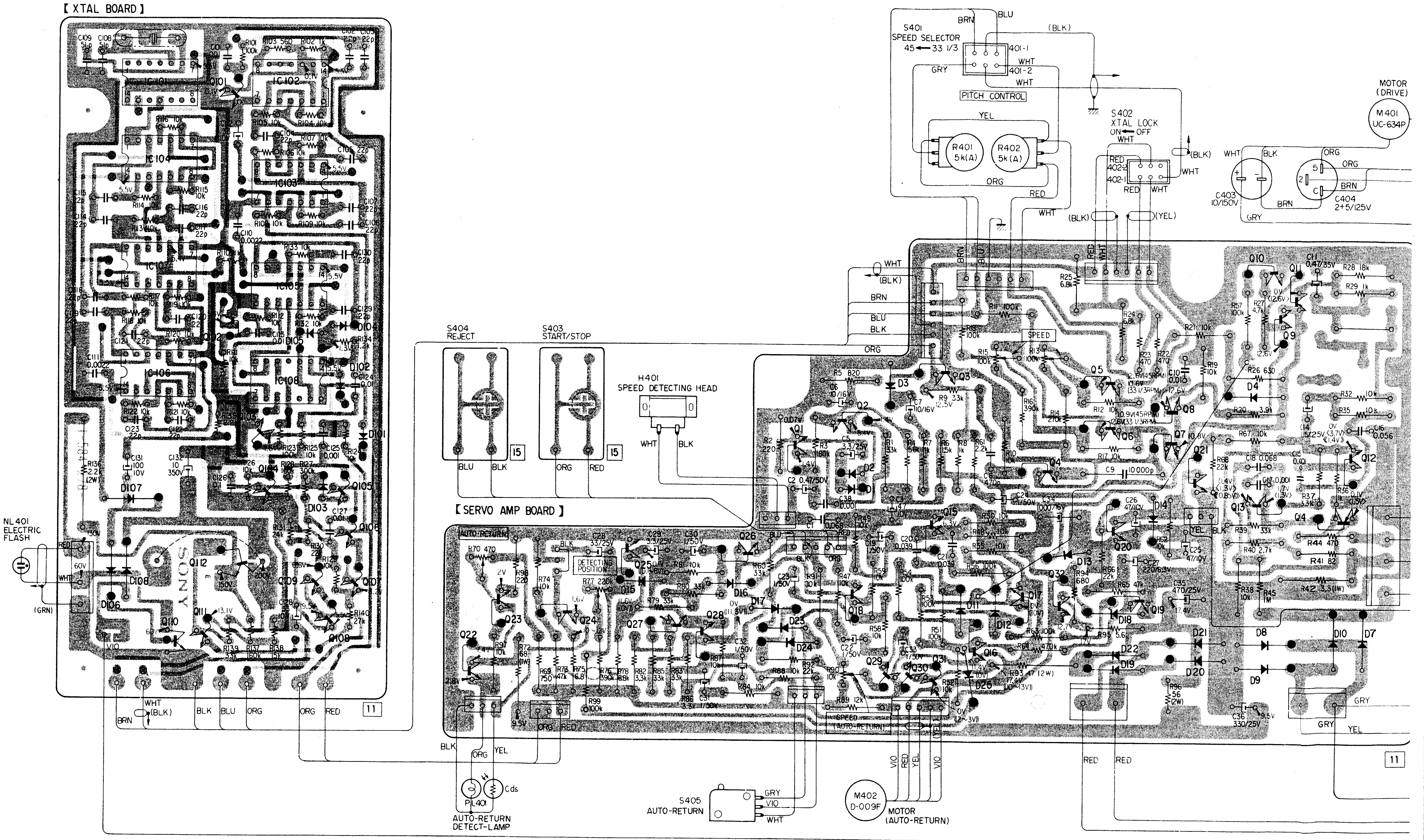


D1, 2: VD-1220



D18: EQA01-12S





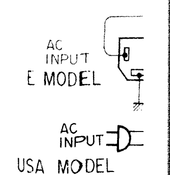
Q / IC	IC101 IC104 IC107 IC106 110 111 101 102 112 103 104 IC102 IC103 IC105 IC108 109 108 105 106 107
D	107 106 108 105 103 104 102 101

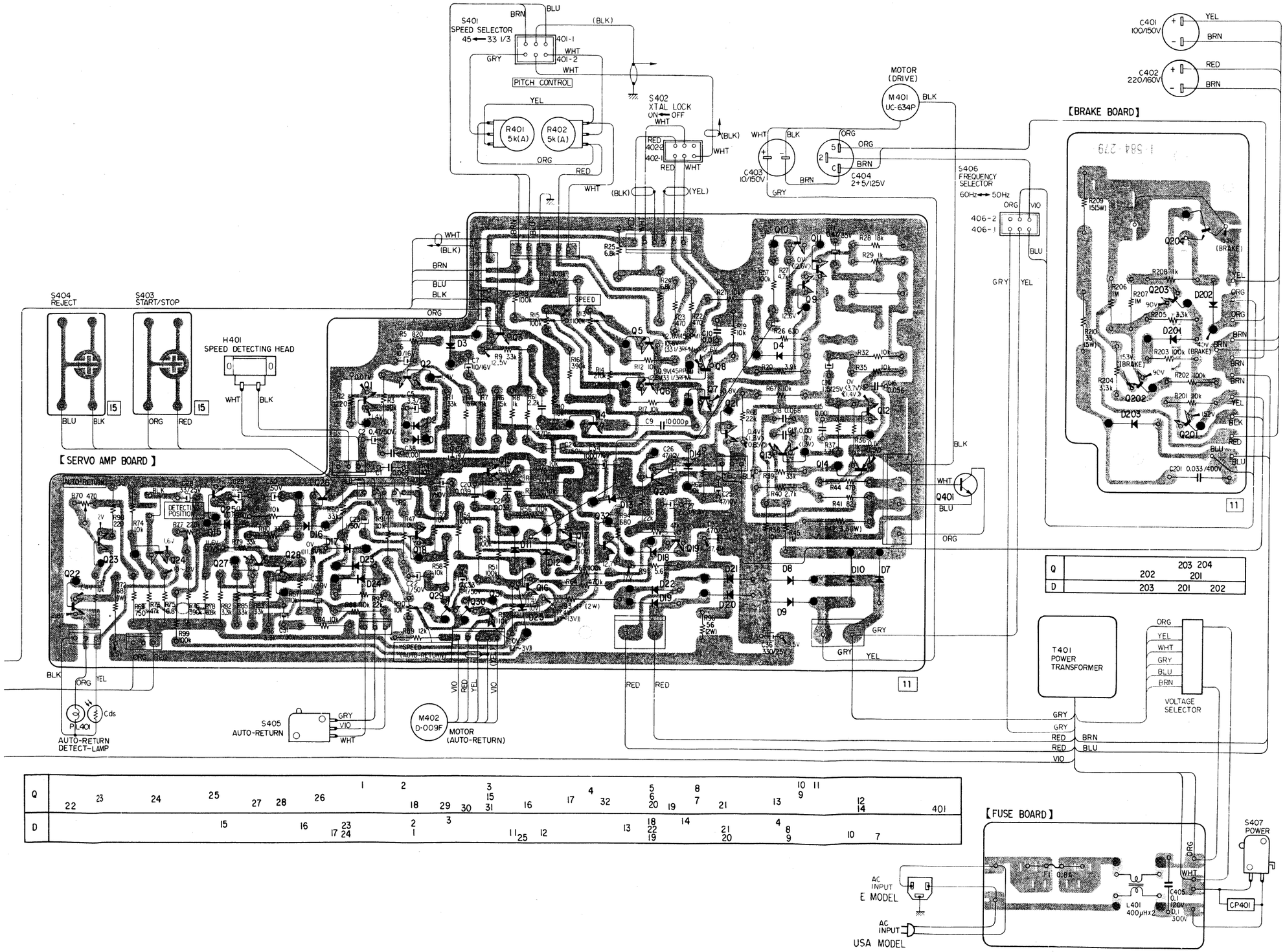
Q	22 23 24 25 27 28 26 1 2 18 29 30 3 15 31 16 17 4 32 5 6 20 19 8 7 21 13 10 11 9 12 14
D	15 16 17 23 24 2 1 3 11 25 12 13 18 22 19 14 21 20 4 8 9 10 7

Note:

⊗ indicates a hole made to connect the patterns on both sides of the printed circuit board.

:pattern on component side of the printed circuit board.



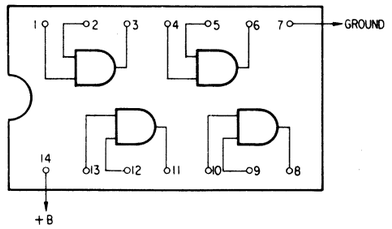


Q	22	23	24	25	27	28	26	1	2	18	29	30	3	15	31	16	17	4	32	5	6	20	19	8	7	21	13	10	11	9	12	14	401
D				15			16	17	23 24	2 1			3		11 25	12			13	18 22 19			14		21 20		4 8 9		10	7				

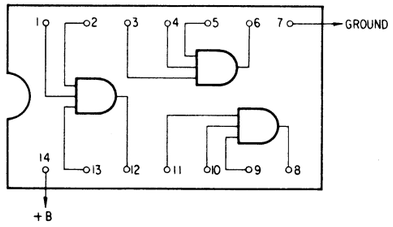
Q	203	204
	202	201
D	203	201 202

BLOCK DIAGRAMS

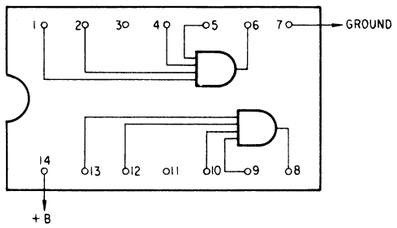
IC102~106 M-53200P



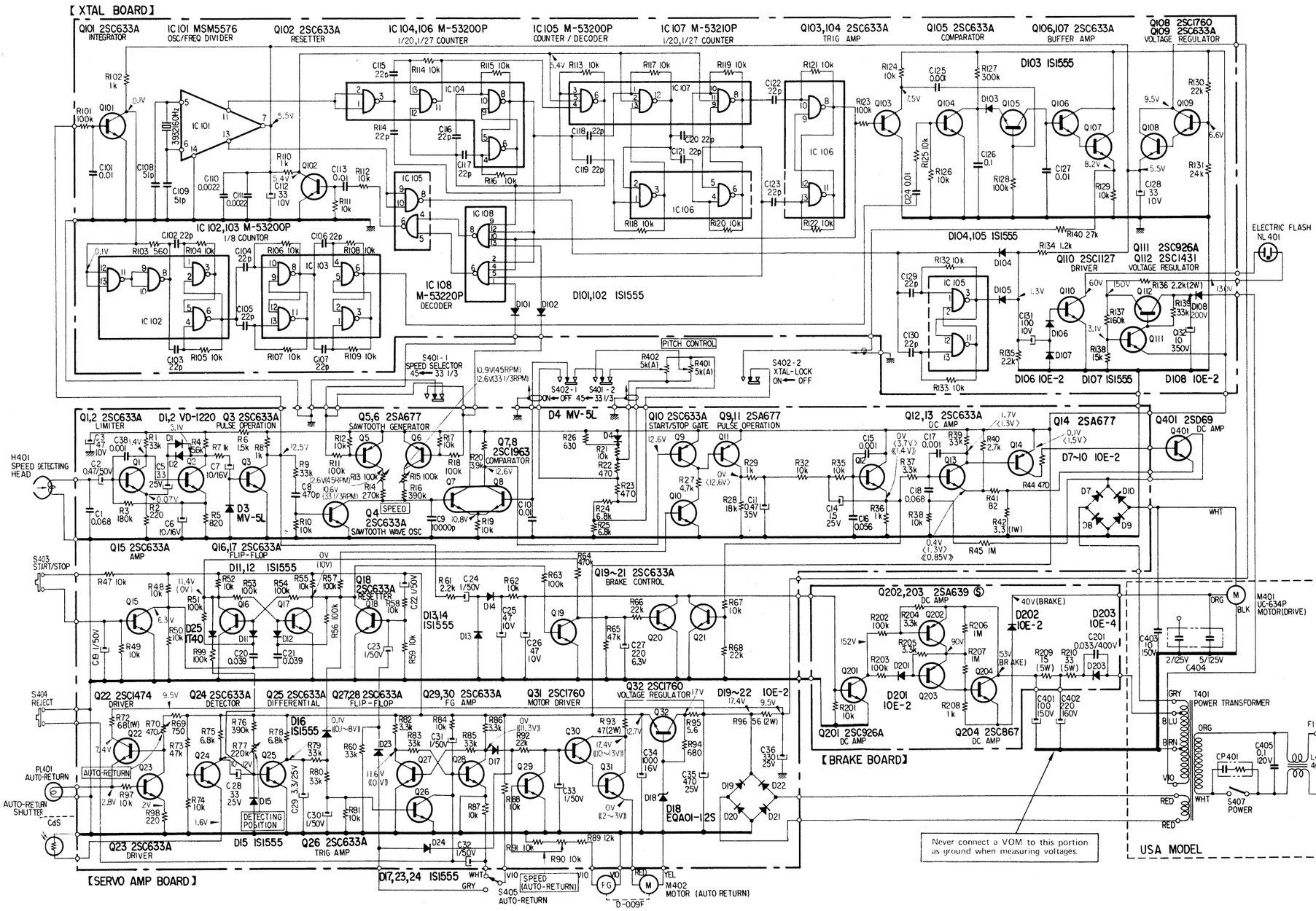
IC 107 M-53210P



IC 108 M-53220P



4-2. SCHEMATIC DIAGRAM

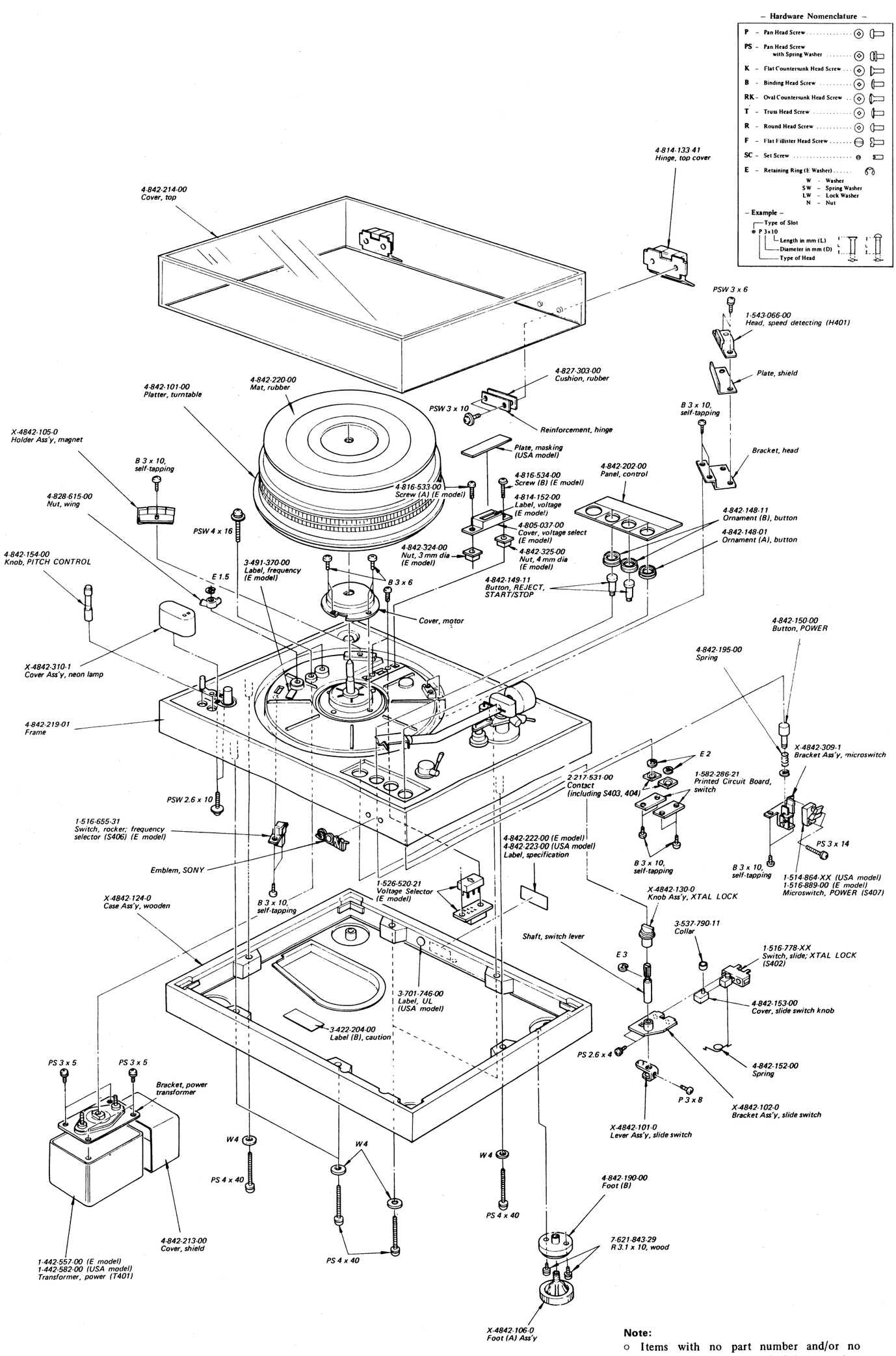


Note:

- All capacitors are in μF unless otherwise noted. 50 or less working volts are omitted except for electrolytic type. p = μμF.
- All resistors are in Ω, ¼W, unless otherwise noted. k = 1,000 M = 1,000 k
- ⏚ indicates chassis ground.
- Voltages are DC with respect to ground unless otherwise noted. Readings are taken under no-signal conditions with a VOM (20 kΩ/V).
  - < > When ac servo motor rotates without turntable
  - ≪ ≫ When ac servo motor rotates with turntable
  - ( ) When depressing start/stop button to "START"
  - (( )) When depressing reject button
  - no mark: common
- Voltage variations may be noted due to normal production tolerances.
- IC102~108: Every terminal of 7 is connected to ground. Every terminal of 14 is connected to B+ circuit.
- Switch Mode:

Ref. No.	Switch	Position
S401	speed selector	33⅓
S402	XTAL LOCK	OFF
S403	START/STOP	OFF
S404	REJECT	OFF
S405	auto-return	OFF
S406	frequency selector (E model)	50 Hz
S407	POWER	OFF

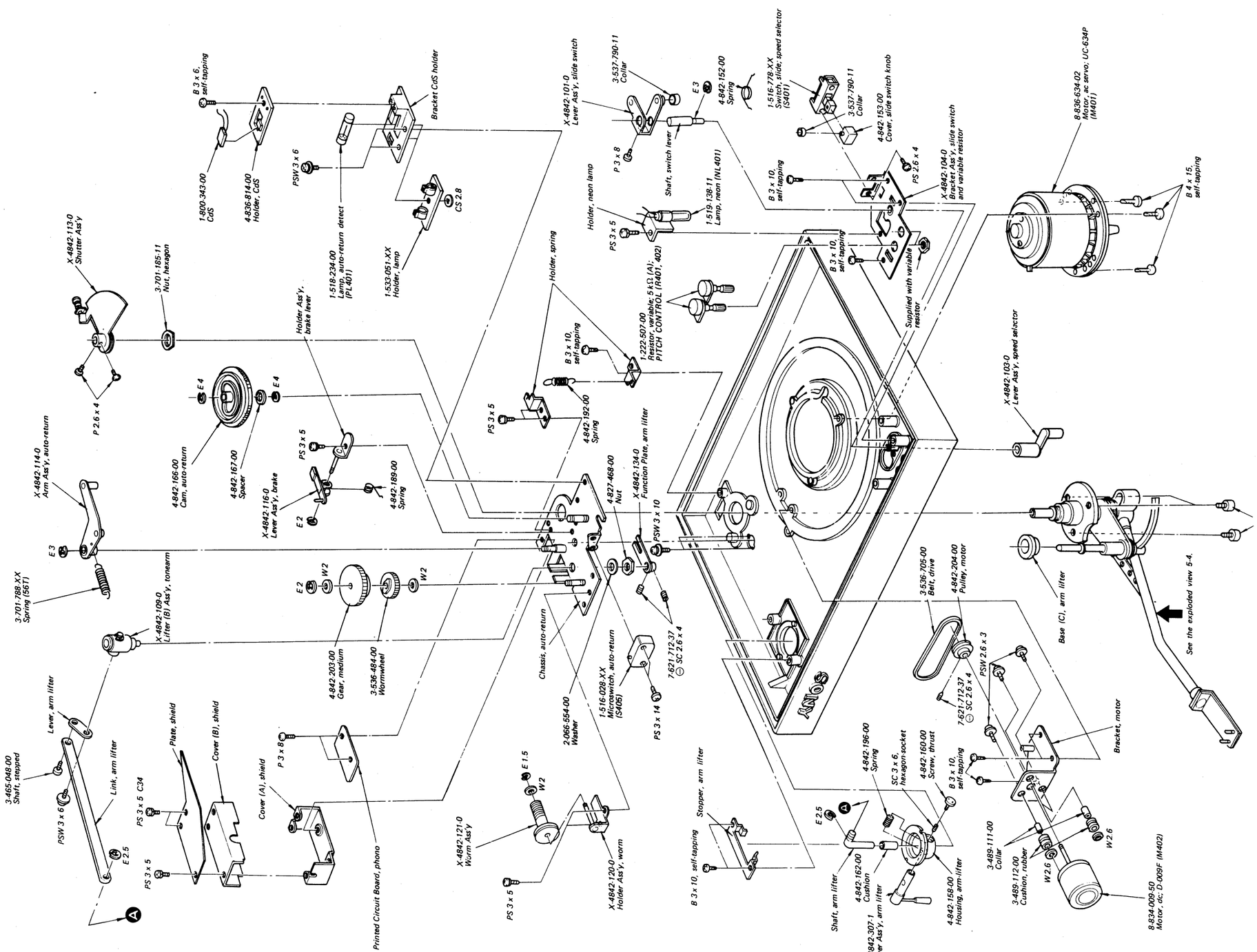
SECTION 5
EXPLODED VIEWS



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.

5-2.



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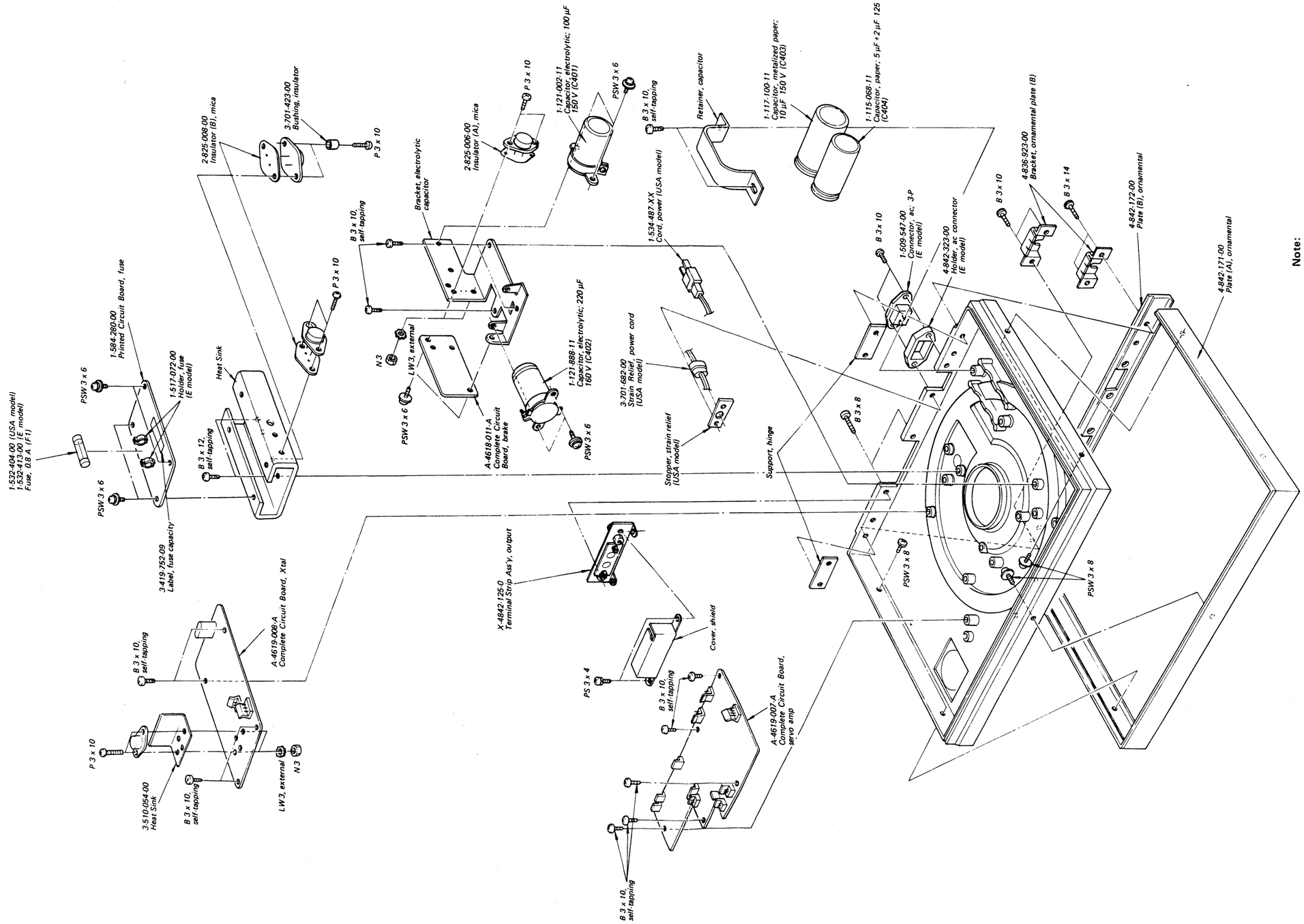
5-3.



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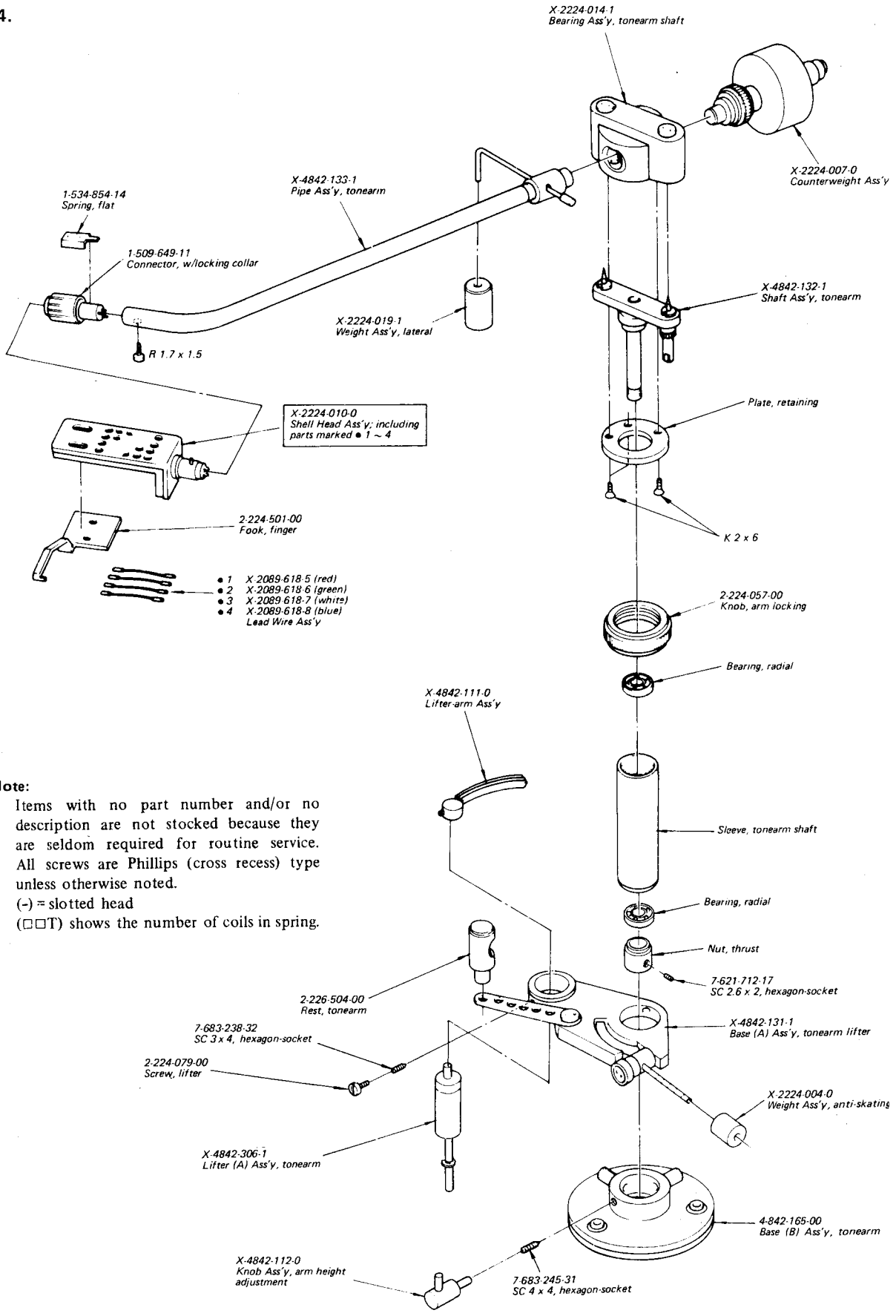
  (-) = slotted head
  (□□T) shows the number of coils in spring.

5-4.



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- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head
- (□□T) shows the number of coils in spring.

SECTION 6
ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
		COMPLETE CIRCUIT BOARDS
	A-4618-011-A	brake
	A-4619-007-A	servo amp
	A-4619-008-A	Xtal
		PRINTED CIRCUIT BOARDS
	1-584-280-00	fuse
		SEMICONDUCTORS
		Transistors
Q1~4		2SC633A
Q5,6		2SA677
Q7,8		2SC633A x 2 (replacement transistor for 2SC1963)
Q9		2SA677
Q10		2SC633A
Q11		2SA677
Q12~21		2SC633A
Q22		2SC1474
Q23~30		2SC633A
Q31,32		2SC1760
Q101~107		2SC633A
Q108		2SC1760
Q109		2SC633A
Q110		2SC1127
Q111		2SC926A
Q112		2SC1431
Q201		2SC926A
Q202,203		2SA639S
Q204		2SC867
Q401		2SD69
		ICs
IC101		MSM5576
IC102~106		M53200P
IC107		M53210P
IC108		M53220P

Ref. No.	Part No.	Description
		Diodes
D1,2		VD1220
D3,4		MV5L
D7~10		10E2
D11~17		1S1555
D18		EQA01-12S
D23,24		2S1555
D25		1T40
D101~105		1S1555
D106		10E2
D107		1S1555
D108		10E2
D201,202		10E2
D203		10E4

CAPACITORS

All capacitors are in μF and of electrolytic unless otherwise noted. (p = μμF) 50 or less working volts are omitted except for electrolytic type.

C1	1-108-847-12	0.068		mylar
C2	1-121-726-11	0.47	50 V	
C3	1-121-352-11	47	10 V	
C5	1-121-392-11	3.3	25 V	
C6,7	1-121-651-11	10	16 V	
C8	1-102-836-11	470 p		ceramic
C9	1-103-043-11	10000 p		styrol
C10	1-108-837-12	0.01		mylar
C11	1-121-726-11	0.47	50 V	
C14	1-131-237-11	1.5	25 V	tantalum
C15	1-108-825-12	0.001		mylar
C16	1-108-846-12	0.056		mylar
C17	1-108-825-12	0.001		mylar
C18	1-108-847-12	0.068		mylar
C19	1-121-391-11	1	50 V	
C20,21	1-108-844-12	0.039		mylar
C22~24	1-121-391-11	1	50 V	
C25,26	1-121-352-11	47	10 V	
C27	1-121-419-11	220	6.3 V	

Ref. No.	Part No.			Description
C28	1-121-404-11	33	25 V	
C29	1-121-392-11	3.3	25 V	
C30~33	1-121-726-11	1	50 V	
C34	1-121-245-11	1000	16 V	
C35	1-121-410-11	470	25 V	
C36	1-121-245-11	330	25 V	
C38	1-108-825-12	0.001		mylar
C101	1-108-833-12	0.01		mylar
C102~107	1-102-967-11	22 p		ceramic
C108,109	1-102-491-11	51 p		ceramic
C110,111	1-101-919-11	0.0022		ceramic
C112	1-131-195-11	33	10 V	tantalum
C113	1-108-833-12	0.01		mylar
C114~123	1-102-967-11	22 p		ceramic
C124	1-108-833-12	0.01		mylar
C125	1-101-001-11	0.001		ceramic
C126	1-108-816-12	0.1		mylar
C127	1-108-833-12	0.01		mylar
C128	1-131-195-11	33	10 V	tantalum
C129,130	1-102-967-11	22 p		ceramic
C131	1-121-414-11	100	10 V	
C132	1-123-008-11	10	350 V	
C201	1-129-720-11	0.033	400 V	plastic
C401	1-121-002-11	100	150 V	
C402	1-121-888-11	220	160 V	
C403	1-117-100-11	10	150 V	metalized paper
C404	1-115-068-11	5 + 2	125 V	paper
C405	1-108-747-22	0.1	300 V	mylar (E model)
	1-108-747-11	0.1	120 V	mylar (USA model)

RESISTORS

All resistors are in ohms. Regular-type ¼ W carbon and composition resistors are omitted. Check schematic diagram for resistance values. k = 1000

R13,15	1-224-255-XX	100 k		adjustable
R14	1-213-200-11	270 k	¼ W	metal-oxide
R16	1-213-201-11	390 k	¼ W	metal-oxide
R21	1-213-199-11	10 k		metal-oxide
R24,25	1-213-198-11	6.8 k		metal-oxide
R42	1-212-366-11	3.3	1 W	carbon
R70	1-222-701-00	470		adjustable
R72	1-213-129-11	68	1 W	metal-oxide
R77	1-222-994-00	220 k		adjustable
R90	1-222-805-00	10 k		adjustable
R93	1-206-122-11	420	2 W	metal-oxide
R96	1-206-481-11	56	2 W	metal-oxide
R136	1-206-672-11	2.2 k	2 W	metal-oxide
R209	1-217-300-11	15	5 W	wirewound
R210	1-217-304-11	33	5 W	wirewound
R401,402	1-222-507-00	5 k (A), variable; PITCH CONTROL		

SWITCHES

S401,402	1-516-778-XX	Slide, speed selector, XTAL LOCK
S403,404		START/STOP, REJECT (included in contact)
S405	1-516-028-XX	Micro, auto-return
S406	1-516-655-31	Rocker, frequency selector (E model)
S407	1-514-864-XX	Micro, POWER (USA model)
	1-516-889-00	Micro, POWER (E model)

MISCELLANEOUS

CP401	1-101-534-00	Encapsulated Component
F1	1-532-404-00	Fuse, 0.8 A (USA model)
	1-532-413-00	Fuse, 0.8 A (E model)
H401	1-543-066-00	Head, speed detecting
M401	8-836-634-02	Motor, ac servo; UC-634P
M402	8-834-009-50	Motor, dc; D-009F
NL401	1-519-138-11	Lamp, neon
PL401	1-518-234-00	Lamp, auto-return detect
T401	1-442-557-00	Transformer, power (E model)
	1-442-582-00	Transformer, power (USA model)
L401	1-421-302-22	Coil, line filter
	1-509-547-00	Connector, ac; 3-p (E model)
	1-509-649-11	Connector, w/locking collar
	1-517-072-00	Holder, fuse (E model)
	1-526-520-21	Voltage Selector (E model)
	1-527-903-00	Crystal
	1-533-051-XX	Holder, lamp
	1-534-487-XX	Cord, power (USA model)
	1-534-854-14	Spring, flat
	1-800-343-00	Cds

ACCESSORIES

Part No.	*Description*
X-2224-011-0	Screw Ass'y, cartridge
1-534-551-XX	Cord, power (E model)
1-551-085-11	Cord, phono
2-089-697-00	Screwdriver
2-224-086-00	Sub-weight
3-780-752-11	Manual, instruction (E model)
3-780-752-21	Manual, instruction (USA model)
3-793-395-13	Gauge, overhang adjustment
4-808-461-00	Adaptor, 45 rpm